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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,196	02/10/2005	Juergen Heuser	Mo7426/LeA 35,606	3715
157 7590 09/28/2007 BAYER MATERIAL SCIENCE LLC 100 BAYER ROAD PITTSBURGH, PA 15205			EXAMINER DRODGE, JOSEPH W	
			ART UNIT 1723	PAPER NUMBER
			MAIL DATE 09/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/505,196

Applicant(s)

HEUSER ET AL.

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11 and 13-17 is/are rejected.
- 7) ☒ Claim(s) 12 and 18-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>0804</u> .  | 6) <input type="checkbox"/> Other: ____                           |

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear if the organic compounds introduced by claim 15 refer to different materials than the contaminants listed in the claim 11 preamble.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Jordan et al patent 3,259,568. Jordan et al generally disclose the recited process steps for purifying waste water from aqueous waste solutions that contain residual acids (column 5, line 71-column 6, line 12) and other organic contaminants; and disclose steps of acidifying, contacting with organic solvent extracting agent to create separate organic and aqueous phases, adding of alkaline, basic material to the aqueous phase and stripping the aqueous phase with aeration gas and/or flocculating agents to separate purified water from organic waste (see especially figure, column 6, lines 53-59 and column 7, lines 17-68). Use of aeration gas or flocculation agent in such manner is deemed a form(s) of "stripping" in that the impurities are entrained in a flow of flocculant or especially gas.

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For claim 15, the acids and surfactants disclosed by Jordan are organic compounds.

For claim 16, the acid-adding step in Jordan initiates an "acidifying reaction that carries over into solvent extraction (column 7, lines 17-18).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan et al patent 3,259,568 in view of Dunning et al patent 3,259,567 and Prieto et al Statutory Invention Registration H1467. Jordan et al generally disclose the recited process steps for purifying waste water from detergent-laden wastes that have surfactants and other contaminants; and disclose steps of acidifying, contacting with organic solvent extracting agent to create separate organic and aqueous phases, adding of alkaline, basic material to the aqueous phase and stripping the aqueous phase with aeration gas and/or flocculating agents to separate purified water from organic waste (see especially figure, column 6, lines 53-59 and column 7, lines 17-68). Use of aeration gas or flocculation agent in such manner are deemed a form of "stripping" in that the impurities are entrained in a flow of flocculant or especially gas.

The claims differ by requiring the detergent-laden waste water to contain one or more of chlorides, residual acids, residual bases and residual solvents. However, Dunning teaches a similar process scheme to Jordan for purifying detergent-laden waste water and specify the detergent as containing sulfonated surfactant (column 2, lines 43-47). Prieto teaches to formulate detergent solutions to include combination of surfactants, such as sulfonated surfactant and solvents (column 8, lines 55-64 and column 13, lines 56-63). The solvents employed by Prieto may include alkali metal aryl sulfonates (column 9, lines 44-55), which are chemically similar to the alkali benzene

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sulfonates disclosed by Dunning at column 2, line 44 and alkyl aryl, and other, sulfonates employed by Jordan at column 6, lines 17-20. Apparently, the sulfonated compounds employed in detergents have properties both of surfactants and solvents.

It would have been obvious to those of ordinary skill in the relevant arts to have utilized the Jordan/Dunn process to purifying of detergent-laden waste water containing also residual solvents, since laundries are more recently using detergents with additional ingredients including solvents since these render the formulation to have better detergency properties (Prieto at column 1, lines 50-51); and since detergent solvents are chemically similar to detergent surfactants and can be treated accordingly.

For claims 13 and 14, Prieto also lists carbonate compounds (column 10, lines 35-50) while Jordan employs addition of gas at several process points which must inherently be removed (column 6, line 70-column 7, line 16 and column 7, lines 44-46).

For claim 15, the acids and surfactants disclosed by Jordan are organic compounds.

For claim 16, the acid-adding step in Jordan initiates an "acidifying reaction that carries over into solvent extraction (column 7, lines 17-18).

Columnar solvent extraction vessels are shown in figure 1 of Dunning for claim 17.

Claims 12 and 18-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 12 is deemed to distinguish for a process to purify aqueous waste water or solutions from an interfacial polycondensation process for production of polycarbonates or diphenyl carbonate. Inada et al patent 6,384,185 and Kuze patent 5,041,523 employ solvent extraction steps to remove impurities from such processes, however not suggesting sequential steps of acidifying and adding of alkali material before and after a solvent extraction step as claimed.

Claims 18-21 distinguish, again over Kuze and Inada in the recitation in claim 18 of recovering a phenolic compound by re-extraction of the organic phase generated in step (b) to generate second organic and aqueous phases and then neutralizing the second aqueous phase.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Roy Sample, can be reached at 571-272-1376. The fax phone number for the examining group where this application is assigned is 571-273-8300.

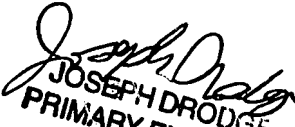
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more

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information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

September 26, 2007

  
JOSEPH DRODGE  
PRIMARY EXAMINER